161 Beyond the Alashan, Nan-shan, and Ta-chi-shih mountains in
133 most parts of Chinghai, western Kansu including most parts of former Ninghsia covering the Alashan and Khara Gobi deserts and all Sinkiang, where the annual rainfall is generally below five inches except in the higher elevations, the small population is intensely concentrated in a number of small isolated oases scattered along the base of the snow-capped high ranges. Numerous snow-fed mountain streams come down the Nan-shan, the Kunlun, the Tien-shan and the Altai.
[312] Before they disappear in the nearby deserts, they provide a reliable source of water for irrigation. Hence a string of
487 oases are scattered between deserts and mountains. The so-
312 called Kansu corridor along the Nan-shan, the Silk Road
361 along the Kunlun, the Tien-shan nan-lu (Southern Road)
161 and the Tien-shan pei-lu (Northern Road) along the south and north foothills of the Tien-shan (Celestial Mountain) Range are all developed along these oases which provide the only available natural stations along all the trade routes through Northwest China and Central Asia. These oases are the sole centers of human settlement for agriculture, horticulture, animal husbandry, and pastoralism. Since they are so intensively
487 cultivated and populated, in most cases they form administrative
361 hsien or county seats, i.e. from southeast to northwest along
634 the Kansu corridor, Ku-lang, Wu-wei, Yung-chang, Shan-
161 tan, Chang-yeh, Lin-tse, Kao-tai, Chiu-chuan, Yü-men, An-hsi, Tun-huang, etc. Along the Silk Road at the foot of the Kunlun Mountains east-westward are No-chiang, Chieh-mo, Keriya (Yu-tien), Tse-leh, Lo-pu, Ho-tien, Mo-yü, Pi-shan, Yeh-chang, Sha-che, Ko-ko, Yingihissar (Ying-chi-sha), Shu-le, etc. Along the Tien-shan nan-lu, east-westward are Qumol (Hami), Shan-shan, Turfan, Ho-sho, Yen-chi, Korla, Lun-tai, Ku-che, Pai-chang, Wen-su, Aksu, Ke-ping, Pa-chu, Ka-shih, Shu-fu, etc. Along the Tien-shan pei-lu, east-westward are Barkul (Chenhsi), Chitai, Urumchi, Chang-chi, Ching-hua, Sui-lai, Wu-su, and Ching-ho to Sui-ting in the Ili valley. Thus the distribution of population occurs in clusters or isolated pockets of densely peopled areas, dotted along the foot of the high mountains, but separated by desert wastes.

361 In the enclosed upland Tsaidam and Koko Nor Basins of
233 Chinghai province, a small number of nomads exist mainly in
311 the part which is oriented toward and exposed to the limited moist wind, where the grassland is suitable for limited grazing. The location varies from basin to basin. In the Tsaidam, the pasture is found in the southeastern part, while in the northwestern part lies the Kcko Beile Desert. In the case of the Koko Nor Basin, the climatic orientation is reversed. Similar conditions prevail

S
433 Under land reform in Sinkiang, on the average, 2.5 mou were
S distributed per person. (PD. August 28, 1954). According to
[161] the 1953 census - Sinkiang has a population of 4,873,608.
That means the average acreage per head would about 4.5
mou instead of 2.5. Taking this as a basis, the estimated
110,000,000 mou of possibly extended land for cultivation
can accommodate nearly another fifty million people; that
S will be ten times larger than its present population.
N
311 Land reclamation by the development of irrigation in
312 Chinghai province and former Ninghsia along the Kansu
185 Corridor is not as promising as in Sinkiang and the mid-
Yellow River drainage area of Shensi and Kansu, because
of the limited amount of snow over the nearby high mountains.
Another three million people (twice its present population)
would be the most that Chinahai could support by land reclama-
tion for agriculture and pastoral development.

Summing up all the possibilities, an approximate total of another fifty-five million people which is nearly one and a half times the amount of its present total population can be supported at the present standard of living by the development of irrigation in land reclamation in the whole Northwest Region
N of China. According to the 1953 Census, the Northwest has
[161] a total population of 35,359,525 with an annual natural increase at a rate of twenty per thousand as the Chinese Communists claim. That means an addition of more than 700,000 people are added by natural increase each year. In approximately seventy years, another fifty-five million people will be added to its present population by natural increase only. But in view of an annual natural increase of nearly twelve million for the whole population of China, the Northwest can be used as a reservoir for the nation for a period of only four years. Therefore the Northwest is extremely limited as a population outlet for China. And the conversion of 110 million mou into arable land in Sinkiang is itself a gigantic task to fulfill; and conservancy of soil and water can hardly cope with the natural increase in population. Land reclamation in the Northwest should be regarded as a means of improving the living standards of the people rather than as an outlet for any further increase of the population.

/The Chinese/

N
*563 by half a million people - even if they live mainly on rice - is
164 bound to be formidable. No sewage system of any kind exists; its
364 place is taken by an old established guild of public servants who
S
563 can be seen every morning in large numbers making their way
164 through the streets. The casks or buckets which dangle from
364 the bamboo poles across their shoulders smell no better than
you would expect them to. They are always full to the brim and
their contents, which are eventually sold to truck gardens on the
S outskirts of the city, are a constant threat to the legs of the
N passers-by.... The buckets in which they carry their night
[415] soil down the hill are used, after being briskly rinsed, to carry
[312] their water up."

Besides producing a very unpleasant picture, this description brings out the very serious problems connected with the lack of a proper sewage system. It also points out the many possibilities for spreading contagious diseases and infections.

N
*563 Tuberculosis is quite prevalent in China. Epidemic diseases
164 are common also, such as typhoid and paratyphoid fevers, cholera
[165] and smallpox. Malaria and the two kinds of dysenteries, amoebic
[844] and bacillary also are present. Death at childbirth, both of infants
S
563 and mothers, is quite high, because of the lack of adequate sani-
164 tary precautions during childbirth and the practices of the mid-
[165] wives, who do nothing to prevent infection of both mother and
[844] child.

S Winfield in his book states that "seventy-five per cent of all
N deaths in China are due to preventable diseases that are under
[165] control in the West; there are about 15 million deaths each year in China, of which 11,750,000 are due to preventable diseases." (China: The Land and the People, p. 111).

D. Medical Personnel

N The lack of Western-trained doctors, nurses, pharmacists
759 and dentists in the Northwest is an extremely serious problem.
*563 Most people, because of the shortage of medical personnel, still
S go to the local herb-doctors. (A full description of the traditional
759 Chinese science of medicine is given in the General Handbook).
563 In many less acute cases, people either neglect to do anything or attempt to treat themselves by unscientific methods.

E. Efforts of the Government

S The Nationalist Government was aware of the serious shortage
N of medical personnel and equipment in all of China, including the
744 Northwest. Two national organizations were established in the 1930's to deal with these problems: The Department of Public Health under the Ministry of the Interior, which had a Northwestern Office for the Prevention of Epidemics, and the National Health Department under the National Economic Council, which also had an office in the Northwest.

by the laymen. Temples frequently maintain free hostels for travellers, and one can count on any layman to provide food, shelter, road guidance, and any kind of help to needy passers-by. It is even customary for a Mongol to leave food in front of his tent during the time he is on an outing. This hospitality is extended to destitutes and refugees also, by Mongols as well as Tibetans, irrespective of the creed of the receiver.

IV. Welfare Efforts Under the Republic, Particularly Under the National Government

With the coming of the Chinese Republic, the realization grew that welfare was a public matter. Although it took time until the rudiments of an organization were set up to implement this realization, the government at best acted to the limits of its possibilities to bring relief in the case of natural catastrophes. During the great famine in the Northwest, caused by protracted droughts and earthquakes in 1928/29, the government organized a special commission to handle relief. The relief work of this commission was financed partly by fixed government grants, special loans and by solicited special contributions from Chinese cities, provinces and private organizations and individuals as well as by organizing a rather successful drive for funds abroad. The role played by the China Famine Relief Commission in this as well as in similar instances is discussed in the Social Welfare Section of the General Handbook.

The realization grew however that with regard to natural disasters, prevention work might be of greater importance than relief. One of the projects that grew out of this realization might be mentioned here, the Wei-pei irrigation project in Shensi. This project was conceived jointly by the Shensi provincial authorities and the China International Famine Relief Commission in the twenties. Actual work commenced in December 1930 and was completed in June 1932. Ninety thousand acres of land have been reclaimed by this combined conservancy and irrigation project. The maintenance of the system was later taken over by the National Economic Council.

In the late thirties this Council was particularly active in irrigation and reclamation schemes in the Northwest. It was responsible for the sponsoring or subsidizing of several large-scale projects in Shensi, Kansu and Ninghsia Provinces.

Unfortunately, there is very little information available on the efforts on the part of the Chinese administration in the field of public welfare in the Northwest, both under the National Government and under the present Communist regime. From the little material we have the general impression is that the local efforts of the Moslem community encompass most of the work done in public welfare.

132 variable, thus making agriculture hazardous. The growing sea-
(241) son is short, with about five frost free months; even the few crops
that can be grown are often injured by autumn frosts. Dark colored
134 chestnut earth is common only on the higher parts of the loess plateau of Shensi and Kansu provinces. It also occurs in the high plateau region of Chinghai Province. In the loess region most of the well-developed dark chestnut earth has been buried under recent loess and alluvial deposits. (T. H. Shen. Agriculture Resources of China, p. 20.)

2. Agriculture

241 Important irrigation systems, made possible by the Yellow
• 312 River and its tributaries, have been developed in Kansu, Ninghsia, and Shensi. All these irrigated areas except Shensi produce one crop a year, such as wheat, millet, peas, or flax because the growing season is short. The large irrigated plains in Shensi along the Wei River, a tributary of the Yellow River, produce good American upland cotton in addition to wheat, corn, and millet. The largest irrigated area is in the Ninghsia plain where there are twenty-five canals from the Yellow River maintained by the provincial industrial bureau. Irrigation is only possible in the valleys, but they are narrow and comprise but a small percentage of the total cultivated area. When Buck made his survey of this area in 1929-1933, he estimated that thirteen per cent of the total cultivated land was irrigated. He felt that the extent of irrigation sometimes depended upon the prices of agricultural
(651) products fell. Because taxes were still imposed on irrigated land and some of these taxes had even increased, further construction of irrigation works was abandoned until prices commenced to rise again.

137 The vegetation of this region is distinguished by the xerophytic plants, bunch grasses on the high elevation, and the tall and short grass sod. In Chinghai province, the Tsaidam Basin is characterized by desert and weeds, while in the same province, in the vicinity of Kokonor, there is grass. In Kansu, along the foothills and in the mountains, grass and weeds exist while in the desert area of Ninghsia, only weeds grow. Grass grows in Shensi along the Chin-ling and Huang-lung mountain ranges.

241 There is an inadequate amount of green manure crops used in this region, which has resulted in a shortage of organic matter and a deficiency in plant nutrients, especially nitrogen. In most of the
(372) area, straw of rice, wheat, rape, and legumes are not ploughed under but are used for fuel, decreasing an important source of organic matter to the soil and removing minerals necessary for plant growth and crop production. Application of chemical fertilizer in addition to local manures and the plowing under of plant residue is very necessary to soil fertility.

*668 578 of the nationalization of cattle and sheep." And again, "there are also many counter-revolutionaries who exploit religion for sabotage and such instances are often found in the minorities areas. In certain pastoral areas in Chinghai, for instance, the discovery of heavenly edicts was rumored. These documents stated that the world would soon be destroyed, and the people meet with severe calamities and suffering." (Current Background. No. 356, September 12, 1955.)

Rumor and religious sects are apparently some of the more concrete forms peasant resistance has taken toward collectivization; among the various minority groups, such resistance can greatly hinder Communist agricultural planning.

*668 232 242 No doubt there is much room for improvement in the pastoral sections of Chinghai, simply by the introduction of better types of breeding techniques and by showing the nationality groups the proper care of their herds during the winter season. In addition, more irrigation and better farming procedures ought to stimulate [474] greater productivity. But the central problem will remain: whether cooperative organizations will yield benefits or whether they will reduce peasant incentive and thereby, in the long run, weaken agricultural development of the area.

3. Shensi

*668 433 *175 The following statistics are from a report by Hsieh Huai-teh, Director of the Department of Agriculture and Forestry for the Shensi Provincial People's Government on 1954 conditions and tasks for 1955. (No. 1014, March 24, 1955. Supplement. Survey of Chinese Mainland Press.) By the end of 1954, the total output of food for the province was 10,091,790,000 catties (201,835,800 bushels); cotton was around 1,800,000 piculs (119,970 tons) as compared to 65,802 for 1938 (nearly a twofold increase); but insufficient attention was paid to the planting of oil bearing crops in various sections and the total output amounted to only around 117 million catties (70,571 metric tons) as compared to the pre-Communist period average for the years 1931-1939, 212,000 metric tons.

*668 241 474 *175 By 1954, 59.4 per cent of the peasant households in the province were organized into some form of co-op, and 13.22 per cent of them had joined permanent mutual aid teams. There were 3,048 agricultural producer cooperatives including one collective farm. All together, around 847 villages have virtually become cooperativized. In Shensi there are a total of seventeen

*668 *175 241 312 State irrigation canals which have enlarged the irrigation area by 44,112 mou (6,705 acres). The number of wells, water wheels and pipe wells have been increased, and the total area irrigated enlarged by more than 192,000 mou (29,184 acres), amounting to 86.7 per cent of the plan for 1954. The total irrigated area in the province is now over 5,623,290 mou (854,740 acres).

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inns of Shensi and Kansu, which we very seldom used, are also not bad, being large and roomy, and constructed mainly with a view to the accommodation of plenty of animals in the courtyard. I have a particular aversion to the Szechuan inn, usually considered, especially by the Chinese, as providing the height of luxury on the road; they are always crowded in between the other houses of a narrow street, and invariably have the defect of placing the *shang fang* (the chief guest room) next door to the *mao fang*, a revolting arrangement for a night's rest, which the Chinese do not seem to object to.

Ch'ingchia Yi was the first place where we struck brackish water, and from here on to within two days of Lanchou I found it scarcely potable. This is a very real trial in the dry season in Central Kansu, and though in the course of our journeys brackish water was of frequent occurrence, we never became accustomed to it, and found it a great hardship to be greeted with a cup of salted tea at the end of a hot day on the road. After the rains have fallen the water is said to sweeten. We were warned of this, of course, but were told that the Mahomedans collected sweet rainwater in specially prepared pits, called *chiao shui*; but owing to lack of rain most of these pits were dry, or contained only a little evil-looking liquid loess mud. I believe that water in pure loess is usually brackish, but in most parts streams or wells are available in the underlying rock; this portion of Central Shensi, however, is in the heart of the loess watershed between the Wei and Yellow rivers, lying mostly over 6000 feet above sea level, and it is the streams themselves which are the worst to drink. I thought I did not know what real thirst was till crossing Central Kansu at the driest season of the year, but later on, when traversing a portion of the Alashan desert further west in early August, we longed even for the salted tea of Huining.

From Ch'ingchia Yi the road continues to ascend the same defile for ten li, crosses a pass in the loess, and descends by a similar ravine leading west. Several hamlets mostly in ruins are passed, including the walled posting stage of Chaichia Tsui. These ruins, now more than fifty years old, which become increasingly frequent as one proceeds west, are part of the trail of desolation left by General Tso's

CHAPTER IX

FROM LANCHOU FU SOUTH TO CH'INCHOU AND THENCE WEST TO T'AOCHOU ON THE KOKONOR BORDER

Shani—Titao—Weiyuan—Kungch'ang—Ningyuan—Fuchiang—Ch'inchou—Schools, government and missionary—Li Hsien—Western end of Ch'inling Shan—Profusion of pheasants—Grass plateau—Modern maps of China—Min Chou—T'ao river valley—New T'aochou—Mahomedans on Kokonor border—Choni—Old T'aochou—Tibetan trade—The Min Shan—Mission work amongst Tibetans—Pneumonic plague.

WE finally left Lanchou on June 9 for Ch'inchou, Minchou, and T'aochou. The road runs due south, ascending a narrow stony valley, for 40 li to reach the village of Akan Chen, picturesquely situated in a wooded gorge. Most of the coal consumed in Lanchou comes from this neighbourhood, and the manufacture of pottery seems to be quite a local industry. We passed the night here, though the village was hard put to it to accommodate our moderate-sized party. On the following day the road ascends through a wooded ravine where pheasants are numerous for some 15 li to the top of the pass, and then descends for three hours' march through a barren rocky gorge to the hamlet of Chungpu, which is an alternative halting-place to Akan for breaking the 120 li from Lanchou to Shani into two stages. From here the road threads its way through barren hills of sandy loess for about 35 li to Shani, a wretched walled village recently promoted to the rank of district city under the new name of T'aosha Hsien. It is suitably named for the surroundings are almost desert, which is characteristic of the T'ao valley from here down to its junction with the Yellow River, and form a curious contrast to the thickly wooded slopes round Akan Chen.

From Shani to Titao Chou is a march of 90 li up the T'ao River valley, which is here about a mile broad and converted by irrigation from a desert into a market garden. Numerous villages are passed, the largest being Hsintientzu and Hsink'ai P'u, 30 and 50 li out. Titao Chou, now Titao

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Hsien, surrounded by rich irrigated lands, is a city of some importance, occupying a strategic position between Lanchou Fu and the Mahomedan strongholds round Ho Chou. It is also a centre of the water pipe tobacco industry and of the trade in lumber, the latter rafted down the T'ao River from the forests of the Kokonor.

From Titao to Weiyuan Hsien is a distance of 110 li across the watershed between the T'ao and Wei rivers, which can be divided into two marches by halting at the hamlets of Yaotien or Ch'ingp'ing, where there are inns, 50 and 80 li out respectively. Leaving Titao the road runs up a shallow cultivated valley bounded by hills of red clay in an easterly and then a southerly direction for 80 li to the hamlet of Ch'ingp'ing, where the valley is a mere ravine. From here it ascends a grassy ridge which is followed for two hours' march to gain the watershed pass, and then drops steeply to Weiyuan Hsien. The railway from Hsian to Lanchou which, it is proposed, shall follow up the Wei valley, will here presumably require a tunnel through this watershed to reach the valley of the T'ao. Weiyuan is of some interest to the Chinese as lying on the headwaters of their historical river the Wei. We found it a small but well-kept city, rejoicing in a particularly progressive young magistrate. The river is here quite small and easily fordable, and its valley though narrow is cultivated and has a prosperous appearance.

From Weiyuan to Kungch'ang is a march of 90 li by a good road down the valley, generally a mile or two wide, well cultivated, and bounded by bare hills. Numerous villages are passed, the largest being Shouyang Ch'eng, half way. Kungch'ang Fu, now known as Lunghsi Hsien, is a large city in extent, but having been destroyed during the Mahomedan rebellion is still half in ruins. Another march of 90 li, still down the valley, brings one to Ningyuan. Forty li out the hills close in on the valley which becomes barren and stony. The Wei River is forded twice on this stage and also the Nan Ho, a large tributary from the south. The latter was in flood and gave us some trouble. Immediately after crossing the Nan Ho there is a steep ascent and descent over a ridge which blocks the valley at this point, followed by an hour's march down the open valley to Ningyuan.

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meaningless jargon of transliterated Chinese characters, does more harm than good to the cause of Christianity. A translation of the Old Testament, distributed, in accordance with the declared policy of the Bible Societies, without notes or comment, cannot but compare unfavourably with the austerely pure classics of Confucius. In striking contrast to the work of the Bible Societies is that carried on by the Christian Literature Society in its dissemination of wholesome modern literature.

From Ho Chou to Lanchou Fu is a three days' journey called 210 li. The road runs in a north-westerly direction across the fertile valley to reach the Tahsia River, which is crossed by a well-built wooden bridge. From here it ascends steeply over hills of loess and red clay for a few hundred feet, and then runs along a ridge between two deep narrow valleys for 35 li to the village of Sonanpa. The divide between the T'ao and Tahsia rivers is crossed just before reaching Sonanpa, a village with inns perched up on the top of the ridge, where we passed the night.

On the following day's march the road continues along an undulating ridge, gradually descending, for four hours' march to the village of Tawant'ou, lying on the edge of the loess mountains overlooking the T'ao River valley, into which the road drops by a long and very steep descent to reach the township of T'angwanch'uan. This place is about half-way between Ho Chou and Lanchou Fu and is the largest centre passed on the way. The T'ao valley in the neighbourhood is irrigated and fertile, but the surrounding hills are bare of all vegetation, and the country is absolute desert where irrigation ceases. The geological formation of the hills, loess superimposed on red sandstone weathered into pinnacles and pillars of all kinds of shapes and designs, presents a most curious sight. In the valley the noonday heat of the midsummer sun reflected off the desert rocks was terrific. The T'ao River, here about 80 yards wide, deep and rapid, is crossed by a ferry, and the road continues north-east through desolate sandy hills to Manp'ing, a miserable village, the end of the stage and 80 li from Lanchou. This place is in the district of Shani, which is mostly desert.

From Manp'ing the road ascends through a desolate

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underlings that a mule must be found, and the latter had gone round to the inn as the most likely place to find a suitable animal, and had simply walked off with the best one they could lay hands on.

At Kulang one is 120 li, two short marches, from Liangchou. The road runs at first across a loess plain dotted with fortified farms past the village of Shuangt'a to the old posting station of Chingpien Yi, a short stage of 50 li. The villages and post stations on this side of the divide are even more dilapidated than those further east, and are mostly nothing but a heap of ruins round an inn or two. The people here seem to have given up living in villages, so prominent a feature of Chinese life in most provinces, and occupy the fortress farms with which the plains are dotted. From Chingpien Yi to Liangchou the road continues across the level plain which is in places almost entirely covered with loose stones, rendering the going very slow and tiring. On the left hand the view is bounded by the snow-capped Nan Shan; on the right the plain extends to the horizon. The twin pagodas of Liangchou form a prominent landmark denoting the approach to the city.

Liangchou Fu, now known as Wuwei Hsien, is about the most important city, commercially and politically, in Western Kansu. It lies in an irrigated plain dotted with fertile oases between the Nan Shan mountains and the desert of Alashan. This plain is traversed by numerous streams and irrigation channels flowing down from the snows of the mountains to lose themselves eventually in the sands of the desert, and owing to this never failing supply of water for irrigation purposes is a very fertile and productive region. The inhabitants of Liangchou and the surrounding plains are mostly Chinese; the whole region was devastated during the big rebellion, and was again laid waste by marauding bands of Mahomedans from the Hsining neighbourhood during the rebellion of 1895. The interior of the city is very poor-looking and dilapidated, like most Kansu towns, and the streets are almost entirely covered with the same loose stones found outside; riding being the only method of getting about, these stones are a great drawback to the place. There is a station of the China Inland Mission at Liangchou which can compete with those at Hsining and Ninghsia for

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to cultivation, has of course had a great effect on the good results obtained. It now remains to be seen whether suppression can be maintained after the withdrawal of this foreign stimulus. In the eastern provinces where the upper and middle classes are more or less in contact with the West a strong native public opinion now exists against opium; the same cannot be said of the backward North West; and it is there that the authorities will have to watch for recrudescence of cultivation. As regards the suppression of smoking and consumption generally, the same success has by no means been attained, and in out of the way parts it appears to be indulged in much as formerly. In view of the increasing scarcity of the drug, however, and the rising price, this cannot really be the case, and if suppression of cultivation is strictly adhered to, the existing stocks will gradually be exhausted, and the rising generation will grow up without contracting the opium habit.

We rested at Liangchou for a day, being entertained by the officials, and then left for Chenfan, distant three marches. The first stage was 65 li to a group of farms called Chungchia Ta Men lying on the edge of the desert. For the first three hours the road, a good cart-track, lies through rich irrigated country, and for the rest of the way belts of sandy desert alternate with irrigated fields. The water, where it is not obtainable from irrigation channels, is very brackish. From Chungchia Ta Men the road continues north across a sandy plain between the desert on the right hand and cultivated lands on the left. Farms with wells are passed 20 and 40 li out. Hsiangchia Wan, the end of another stage of 65 li, is a thickly populated oasis on the edge of the desert, lying just east of a range of barren hills which form a prominent landmark from afar. The snow mountains behind Liangchou now fade out of sight. From here to Chenfan Hsien is a distance of 70 li. The trail still runs north over a sandy plain covered with scrub and rough grass with a river on the left hand, the latter formed by the junction of various streams and irrigation channels, and flowing north to water the Chenfan oasis and beyond to lose itself in the sands of the desert. Branches of this stream have to be forded at various points; though quite shallow, they contain dangerous quicksands and should be approached with care. Thirty-five

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li out cultivation and houses are reached at Kaochia Ta Men, the beginning of the large Chenfan oasis, and for the rest of the stage the road runs through rich irrigated lands with occasional excursions into sand dunes.

Chenfan Hsien is a prosperous little district city in a highly fertile oasis. Immediately round the town is a belt of rich cultivation, and patches of irrigated land occur in the desert for 200 li to the north. There are no villages in these oases, the people living entirely in walled farms. Wheat is the main crop raised, and the abundant water supply from the snow-fed streams for irrigation purposes, combined with an almost rainless climate, appears to assure good crops with machine-like regularity. Chenfan compares favourably with most towns in Kansu, the streets are clean and well kept, there is a noticeable absence of ruins, and the shops display a surprising variety of goods. At the time of our visit the district enjoyed the services of one of the best territorial officials we met throughout the North West, a young man who really appeared to have the interests of the people at heart, and to devote himself as far as lay in his power to improve their lot. He remarked that the post, though so isolated, was pleasant enough in the summer, but that in the winter the north winds from the Alashan desert were terrible, much worse than the severest winter sand-storms ever experienced at Peking. The inhabitants of the surrounding oases seem entirely cut off from the rest of China, and form little self-supporting communities. Chenfan itself, however, is, strange to say, in direct communication with Tientsin and the coast by means of a much frequented camel route from Kueihua Ch'eng to Liangchou across the Mongolian grass country and the Alashan desert. This road, which debouches from the desert at Chenfan, enables the Mahomedans of the Ho Chou and Hsining neighbourhood to communicate with the coast without passing through Chinese Kansu at all.

From Chenfan we had to proceed to Hsining, the frontier town on the high road to the Kokonor and Tibet. Enquiries showed that we had the choice of two roads, to the north or south of the snow mountains behind Liangchou respectively. As the latter would have meant retracing our steps to Kulang, we decided to follow the former, which entailed going due

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without a scrap of vegetation. A little gold-washing is carried on in this neighbourhood. There were numerous rapids, over which our rafts rode triumphantly. Navigation, carried out by sweeps at the bow and stern, consists in avoiding the rocks and sand-banks and keeping the raft clear of the cliffs where the river swirls round a corner. Unless engaged in a particularly fierce rapid but little attention is paid to these cliffs, and on several occasions my raft crashed against the perpendicular wall of rock in a way which would have smashed a boat to pieces, but without doing any damage beyond shifting a few telegraph poles. In the bad rapids, however, where the water is heaped up into the centre of the river in a tongue like the big rapids on the Upper Yangtzu, great care is taken, since the pace is so tremendous that the raft could scarcely survive the impact with a large rock. Towards evening we noticed large numbers of goral (or wild goat of some kind) in these gorges, clambering about the precipitous cliffs in tens and twenties; one could have shot any number from the raft, but it would have been impossible to stop and retrieve them.

These gorges last for six or seven hours, until finally a picturesque temple on a bluff overlooking the river marks the exit from the gorge and the approach to Wufang Ssu, a boating village in a small plain on the left bank of the river. Sheep are grazed extensively on the semi-desert hills in the neighbourhood, and wool is collected here and shipped down river for the Tientsin trade.

From Wufang Ssu the river flows east and north-east again. Two hours further on another long gloomy gorge, with many rapids and whirlpools, is entered, the passage through which takes seven to eight hours; coal is exposed in the cliffs in places. At length the mountain walls give way to huge sand-hills and then to an irrigated alluvial plain, and two hours further on Chungwei Hsien is reached. Chungwei, lying inland about five li from the left bank of the river, is quite an important town, the centre of a rich fertile region where the desert is irrigated by canals from the Yellow River, and also a market for the wool trade.

Below Chungwei the Yellow River becomes a broad stream obstructed by sand-banks and shallows, flowing through an immense plain dotted with low hills and irrigated

2: Teichman G-5 (1919) 1921 AF13 Northwest China AF13

stretches. So far our river journey had been a complete success; but now things began to go wrong, and we spent three days making a few miles owing to the rafts constantly running aground, when, owing to their unwieldy weight, it was an extremely difficult matter to move them. The culminating misfortune was a tremendous storm of rain and wind one night, which blew our rafts adrift and scattered them over various sand-banks miles apart in impossible positions. We decided therefore to abandon them, and an appeal to the Chungwei magistrate having produced a couple of small boats, we transhipped our effects, sending the ponies overland to Ninghsia, distant a few days' journey. To be on board a raft stuck on a sand-bank in the middle of the Yellow River for two or three days is a good test of one's patience. I at first passed the time by shooting geese, which here began to appear in some numbers, but had to desist as no one would eat them; the Chinese goose, though a magnificent bird to shoot, is very tough and stringy to eat, and is only palatable if carefully cooked and stuffed. Fortunately the banks were here irrigated and inhabited and one could buy grain and vegetables. Our water supply, as all the way down, was the river; we had no filters, but a pinch of alum in a bucket soon changes the yellow pea-soupy liquid into clear water; another method of eliminating the yellow mud is to scoop a small hole in a pebbly bit of beach, which immediately fills with clear filtered water.

Making a fresh start in our small boats we floated down stream rapidly past several villages for some twelve hours to the walled township of Kuangwu, where the cultivated strips on both banks come to an end, and the large irrigation canal, which commences above Chungwei, rejoins the river. The abrupt cessation of these irrigated lands is due to a range of low mountains through which the Yellow River here breaks its way, and which separate the irrigated plains of Chungwei and Ningan from those of Ninghsia and Chinch'i. The desert everywhere begins where irrigation ceases. The passage through the gorge in these hills below Kuangwu takes about an hour, the exit being marked by temples on either side, and the river emerging on to a vast plain. A couple of hours further down we tied up at a village on the right bank not far from the district city of

2: Teichman G-5 (1919) 1921 AF13 Northwest China AF13

Chinch'i, where we were able to examine some of the wonderful irrigation works which render these huge plains, otherwise desert, so fertile. There are similar works on the other bank near the village of Tapa. Their destruction would turn one of the richest plains in North China into a desert. In the North West irrigation is the key to agricultural prosperity, and though the ancient Chinese have done so much in this region, modern engineers could probably accomplish wonders in turning immense areas of what is still desert into fertile lands. Especially lower down, where the river makes its great bend round the Ordos, there would seem to be great openings for modern irrigation works.

Chinch'i Hsien, formerly known as Chinch'i P'u or Ningling T'ing, is a Mahomedan centre, and was the chief rebel stronghold in the great rebellion. The Mahomedans are still very powerful in this region, where their settlements extend south through Haich'eng and Kuyuan to P'ingliang in Eastern Kansu. T'ung Fu-hsiang's family own large estates in the neighbourhood, which they appear to have acquired after the capture of Chinch'i in 1871 by the latter. This event was the beginning of the end of the rebellion in Kansu, which led to the eventual defeat of Yakub Beg and the recovery of Chinese Turkestan; had the Kansu Mahomedans held out, the reconquest of Central Asia would have been rendered impossible, and the fall of Chinch'i constitutes therefore an event of the first importance in Chinese history.

Shortly before reaching the neighbourhood of Chinch'i we noticed, much to our amazement, a small stern-wheel steamer tied up to the right bank. An examination through glasses showed her to be a mere rusty skeleton, and our boatmen said she had lain there for years. From subsequent enquiries in Ninghsia we learned that this vessel represented an attempt, made just before the revolution, by the Kansu Viceroy with the assistance of a Belgian gentleman to establish steam navigation on the upper Yellow River. A small river steamer was purchased, transported in sections at great expense overland and put together at Paot'ou. She seems to have made one trip up river, reaching with great difficulty the spot where she is now, and where she is likely

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largely attended, as many as eighty men and women registering in one locality. The majority were illiterate. We therefore considered it best to insist on all students becoming first of all proficient in the Government Phonetic Script, by means of which system an illiterate can be taught to read in twenty days. During the three years we spent in Kansu, five hundred and twenty-three pupils learnt this Script in our classes.

The villages of Kansu are often exceedingly poor, and in one of the places we visited the people had sunk so low as to be threatened with extinction by famine. A few miles away from this village the wide Heh ho—Black River—rushes out of a mountain gorge, its waters being then turned into the large irrigation-canals which convey them to the various districts. Quarrels, resulting in lawsuits between the principal villages, had led to the loss of their rights on the river by this settlement. For three years no water had been allowed to come that way, and as rain is so scarce in North-West Kansu no farming can be done without irrigation. As deep poverty seized these unfortunate people, opium-smoking became their only possible luxury, and they were soon plunged in unspeakable degradation. Dr. Kao, with a band of young Christian men, hearing of their miserable condition, paid them a visit. He found their irrigation-canal having been dry for three years was now completely choked with all kinds of débris. Apathy had fallen on the village elders, and the whole situation appeared hopeless. A meeting was convened, to which all the men came, and was opened and addressed by Dr. Kao. He told them of the love of God for each one of them, and of the saving power of the Lord Jesus Christ to free them from even the craving for opium. 'You must repent, pray, and work,' he said. 'We will now together acknowledge

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our sins to God, and ask Him to incline the heart of the Mandarin to restore the water to this district. Meanwhile, let everyone of you fetch his own spade, and supply my men and myself with tools, and we will see what can be done by clearing the canal in preparation for the water for which we have just been praying.' In an hour's time the preacher and men, having thrown off their coats, were digging hard, and repairing the channel. Two days later, Dr. Kao received a summons from the Civil Magistrate of Kanchow, requiring his medical assistance. Before he left the Yamen, the Mandarin said: 'What is this I hear about you and your men, digging out an irrigation-canal at Hehcheng—Black City? I really think something ought to be done for those people over there; as soon as I am rid of this illness, I will enquire into the matter.'

A few days later the water which so long had been withheld poured down the canal, and a new life began for the inhabitants of Black City.

On the occasion of our visit, they had just reaped their first harvest, and some were eating wheaten-bread for the first time in two years. Their homes were almost denuded of the necessities of existence. When we entered many of the barest farms, the women dared not descend from the *kang* to receive us, their rags only covering their nakedness while sitting huddled together, and girls of eleven years of age went about entirely unclothed. Yet even in this poverty-stricken place gifts of food were brought us daily—a few eggs; a bowl of green wheat steamed till the grains burst; a handful of garlic picked wild in the fields, or a bunch of the desert-grown, edible plant (Nostoc commune flagelliforme) known as 'hair-grass,' from its likeness to black human hair;—all these things and many others were presented to us in token of friendship and goodwill.

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these two faithful friends we had also two earnest Evangelists, who never lost an opportunity of recommending the Good News which we were there to proclaim.

CHAPTER XIII

THE CITY OF TEMPLES

WHEN not busy with village classes we made an opportunity to see the sights of Kanchow, which is a very remarkable town. The city wall is three miles in length, and from it a fine view of the well-irrigated, fertile land around can be obtained. This was sown with wheat, barley, millet, and more especially with rice, for which this district is famous, as well as with the opium poppy, and also peas and beans for animal fodder. Nearer the town were numerous fruit-orchards —pears, apricots, and apples—with vineyards which supply the market with both black and white grapes. The amount of water which floods this district from the melting snows is so great that many of the country roads become shallow rivers during the summer months. Looking down into the city from the wall, one's first impression is the beauty of the reed-filled lakes, and the number of splendid trees. From the midst of these the gay, glazed-tiled roofs of numerous temples appear, and a high pagoda built in Indian style catches the eye, but the dwelling-houses are low and insignificant. The roofs are flat and made of mud, and the houses are all very lightly built and obviously crooked, owing to the boggy nature of the soil which does not allow of a sure foundation. The largest temples and the Mission Compound stand on the higher ground of the city,

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distant. We made a détour to visit this, and questioned a band of workmen we found on its border, raking the white crust into glittering mounds. They informed us that every year, in the month of April, the water wells up to its highest level, gradually retreating during the summer, and leaving behind the crystals, which are so clean and pure as to require no further process than that of being exposed to the sun's rays. Strange to say, however, the spring of drinking-water used by the villagers is perfectly sweet.

The inhabitants of Salt Lake village possess the right to a certain tax on every cartload of salt exported, but as usual opium has killed all initiative, and these unhappy people are reduced to an abject state of poverty. The miserable houses, however, are constructed of very endurable material, the blocks being of sun-dried, bituminous clay dug from the borders of the lake, and which are much harder than the kiln-burnt bricks commonly used in Kansu.

It had been reported to us that a Christian Chinese couple resided here, the husband being the official recently appointed by the Chinese Government to receive the salt tax. This lady and gentleman hearing we were there, invited us to their house and we were cordially welcomed into a delightful Christian home. It was indeed pleasant to sit down at a well-served table, and to enjoy once again Christian fellowship and intercourse. These refined people were living under conditions of the utmost isolation, where all food-supplies had to be brought from Kaotai, as it is impossible to grow any grain or vegetables; indeed, the neighbourhood produces no commodity of any description whatever except salt.

And now at length we finally touched the extreme southern border of our objective, and passed, without

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The appearance of the town[1] is not very different from others of the Gobi border, except for its unusual gate, of which the inhabitants are almost unduly proud. It stands in a well-watered belt, and the land is cultivated right up to the city wall. We reached it through a sea of mud, as irrigation was in progress, and in accordance with the careless custom of the Kansu agriculturalist the stream, not being required on the land, had been turned off and allowed to flow down the main road.

We spent several busy, happy days there, as the people were particularly interested and listened willingly. On the morning of our departure, as we left the inn, an old woman pulled one of us by the sleeve in a mysterious manner, and whispered: 'A word about those things that have been lost!' We wondered, what things? Could it be that she had information of our own lost parcel of books, and a sheepskin coat dropped by one of the carters? Seeing our look of interest, the old crone was emboldened to go on with her story. 'You are "Holy Women"; you know secret things, hidden things, things that we cannot divine. Will you, please, tell me before you go, *the name of the thief who stole my cow?*'

Thirty-five miles further on is Pulungki, a city that once must have held at least fifty thousand inhabitants, but which now is nothing but scattered ruins, a few poor inns, and an encircling wall of immense area. During the next few nights we counted ten more deserted towns and villages, and no words can adequately convey the extraordinary sensations evoked by crossing in the moonlight, or in the uncertain pallor of dawn, these abodes of the past, whose deserted streets are sometimes still clearly defined, and where abandoned houses, with yawning doorways, stand tenantless on either side. From dateless ages the Gobi Desert has approached

[1] [Yümen -- Analyst]

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~~Sinkiang AI-1~~

shied in terror at something none of us could see, but which the carter found to be the carcase of a camel. For hours we progressed in this valley[1] of desolation, and about 2 a.m. emerged into a small patch of watered land, where a few families cultivated melons. We do not like these watered lands in the darkness. Deep ditches are dug in all directions to convey the stream of water, sometimes to one part of the land, and sometimes to another. In and out of the dry ditches the cart bumped and stuck, whilst the animals strained at the high banks. Often the ditch was full of water, and this was worse, as through these rivers of uncertain depths the cart must go, and the experience is nerve-racking.

Before long, the barking of fierce dogs (another of the night-terrors) was heard, and our driver stood behind his mules preparing his whip for a possible fight. The farmer, however, was friendly and hospitable. The young men of the household got up, chained the dogs, and gave us the freedom of the threshing-floor for the night, where we slept in our carts. Early in the morning we gathered the people together, and to their great delight held a gospel service with singing accompanied by the harmonium.

When we left, our hostess gave us a basketful of oil-buns—dough rolled into thin cakes and fried in linseed-oil—and we proceeded on our way, still chasing the elusive Hwahaitz. In three minutes we had left the watered land and were once more in Gobi. A group of five magnificent black vultures caught our attention. They were so huge and so statuesque in outline that it was not until our young men had used the field-glasses that they were convinced these were really living creatures and not a group of rocks. The head was quite bald, and the movement in walking resembled the

1 [Between Chikinpu and Hwahaitz--Analyst]

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~~Sinkiang AI 1~~

waddling of a small bear, but in flight they were superb.

It was not until after sunset that we drew near the first farm of the Hwahaitz oasis. The Suchow enquirer came out to meet us, and we found a room prepared for our use. The *kang* had been covered with a length of white cloth; a kitchen with firewood was at our disposal, and a meal was being prepared. But we were too tired to sit up and eat it, and securing a cup of tea, we lay down and promptly fell asleep.

We were up early, but not before the crowd had begun to assemble in the courtyard. After a breakfast of pancakes made of flour into which oil had been kneaded, and which we dipped into vinegar, we went out to see the place. The gates of the walled enclosure in which we were staying were already decorated with Christian posters, and the students were out choosing a suitable site for the tent.

The name of the place signifies 'The Flowery Lake.' The lake, however, after which it is named, proved to be but a small pond in which naked children disported themselves, and where the beasts of the local farmers were brought to be watered. The oasis is circular, large, and extremely fertile. The roads were bordered with poplar and willow trees, and the fields were sown with wheat, millet and flax. We followed the high bank of an irrigation canal, and passed the entrances of several large, prosperous and beautiful farmhouses. The locality is very hot by day, but exceedingly cold at night; at sunset the air hummed with mosquitoes, which, however, only lived a couple of hours before succumbing to the night chill.

We returned to find the site chosen, and the tent pitched. Larger crowds gathered even than at Chikinpu, and the sales of gospels were most remarkable.

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~~Sinkiang AI-1~~

000 The days spent there were very hot and tiring, but eminently worth while.

CHAPTER XXXI

JADE GATE TO ANSI

491 To get away from Hwahaitz proved a more arduous business than reaching it had been, and fifty miles of the dreary Gobi still stretched between us and the town of Yümen—Jade Gate—which was our next objective. •[312] In the whole of these fifty miles there was only one spot where water was obtainable, and this was merely a brackish spring near to a hut in which lived an old couple. We left Hwahaitz at 4 p.m. on a very hot day, but after sunset it turned bitterly cold. At 2 a.m. we reached the hut, where, having rolled ourselves in a coverlet, we lay down on the sand, but by 4 a.m. the wearisome spectacle of the sun staring at us over the rim of the world, fetched us reluctantly back to our wanderings. By 3 p.m. we joyfully sighted the distinctive tower of Jade Gate, and a more exhausted, travel-worn party seldom entered its portals, but as this was our third visit to Yümen there were plenty of friends to greet us. The gay little town was now looking its best, the opium fields were in bud, the wheat was green, while the freshness of early summer was still upon the foliage. We spent some days in the city, and discovered that a few changes had taken place since our 634 last visit. The Mandarin, with whose wife we had been friendly, had left, and his successor had modernised the entrance of the Yamen. A decoration of crossed flags ornamented the main entrance, over which a clock face was painted, the hands pointing as usual to

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484 *kang*, scratched by a nail in the grime of the wall, were the following lines :

'To-day we came to Ansichow ;
Midday to morn onward we go ;
All through the night carters' oil-bottles flow ;
Heat, hunger, thirst, cold I now truly know ;
The mere sight of a cart makes my courage sink low !'

This gloomy poem referred, we knew only too well, to the next stage of the journey, spoken of by the carters as a 'thirty-mile march which, with luck might be accomplished in eighteen hours.' On the opposite wall some homesick traveller had also written :

'Tho' a man travels far, yet his heart bides at home,
'Tis the prospect of wealth that still urges him on.
But he looks for home joys when his hardships are past,
And his wife's well-trimmed lamp guides his feet back at last.'

484 From Ansi we entered on a period of twelve brackish
312 water stages, and with this in view we bought some gourds as water-bottles, in addition to the aluminium flasks we always used for our personal supply, as well as a large zinc can given us by a Turki friend. There
[244 was still no fruit to be had, but cucumbers were plentiful.
563 The Turki bakers, who formerly supplied us with excel-
486] lent bread, had vanished. They were unable any longer to travel freely, and preferred returning to their
252 own people in Turkestan. We, however, laid in good stocks of *kwo kwei*, so familiar to every traveller in Kansu. These are round loaves of bread, two inches thick, measuring two feet across, and are baked on a circular iron plate covered with an iron lid, beneath and above which straw is burnt, while the heat of the smouldering embers suffices to cook the loaf.

000 A few days were enough for rest and provisioning, and for the small repairs needed by the carts, then once

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~~Sinkiang AF 1~~

efforts. The road here was also quite deserted, as the rigid policy of the Governor had closed it to travellers, and the caravans which normally move up and down this trade-route had vanished. Once, however, we passed a pedestrian, who begged us, as though asking for gold, that we would grant him a drink of water, which of course we did, and afterwards at 10 a.m., thrown across the line of cart-ruts, we came upon the body of another man. A low stick supporting a little bundle of sheepskin threw a patch of shade over his head and served as a signal to passers-by. At first it was not evident if he were dead or alive, but one of the men raised him by the shoulders, whereupon he opened his eyes and murmured, 'A drink of water and I am your slave for life!' We held a cup to his lips, and when he had drunk he somewhat revived, and begging for more, repeated, 'Your slave for life!' We were still many miles from our destination, and our head carter called us aside. 'The man is dying,' he said; 'he is too weak to walk; we can spare neither water nor time. We must press on or we shall lose our mules.' The Christian men were desirous to help, but they also reminded us that if we took him on with us he might die, and thereby involve us in certain complications.

'Nothing will induce us to leave a dying man to his fate!' was our answer; and then seeing that the poor fellow was unable even to stand on his feet, we made room for him in the front of our own cart, while we took it in turns to walk so that the load need not be increased.

At 1.30 p.m. our mules sighted a few blades of green grass, and realising that water was at hand, Molly first gave the signal, lifting her head with a loud neigh! Every beast then summoned its dwindling store of energy, and a few minutes later we pulled into the inn court. The innkeeper at once took our sick man to

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312 485 his own room and cared for him, and the subsequent doings of the day for the remainder of the party are best described in the words of the diary, written at the time : ' Ate, slept, got up, and ate again ; then back to bed for the night.'

312 The oasis of Petuntz—' White Tower '—formed a green patch in the arid surroundings. A delightful-[24] looking stream gushed from the cliff and ran into a tiny canal which watered a patch of wheat and a small field of the opium-poppy in full bloom, which raised in us the hope for vegetables, but we found the water to be too alkaline to permit their growth. This property of the water we had, however, already discovered for ourselves, for our first instinct on arrival had been to run to the crystal spring and drink deeply from it ; it was, however, a most disappointing experiment, so that here we had to take our first lesson in self-control as regards drinking, for the advice of experienced travellers is : ' Where the water is brackish, drink the least possible, as the more you drink the more parched will be your mouth ! ' It was now we learnt the bitter lesson that that delicious beverage known to us as ' tea ' became in these places only a noxious infusion of tannin which left our lips dry, cracked and black. We found the only palatable way of dealing with desert water was to boil dough-strings in it, the flour and water absorbing the salts. We also, as well as all other caravans, carried certain drugs to administer to the mules as required, serious illness being frequently caused by their inability to assimilate the unaccustomed qualities of the water, human beings, however, as well as beasts who spend long periods in these parts, become at length accustomed to it, and cease to notice its bitterness.

494 The life of the few families forming these settlements

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Map of Sinkiang (Chinese Turkestan) marking each oasis on the main trade route across the Gobi Desert.
THE HEAVY LINE INDICATES THE ROUTE FOLLOWED BY THE WRITERS.

[FOLDED MAP (A)]

[end map]

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Map of Sinkiang (Chinese Turkestan)

[FOLDED MAP (B)]

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Map of Sinkiang (Chinese Turkestan) marking each oasis on the main trade route across the Gobi
THE HEAVY LINE INDICATES THE ROUTE FOLLOWED BY THE WRITERS.

FOLDED (L)

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...cle route across the Gobi Desert
THE WRITERS

[FOLDED MAP (D)]

000 In the night of 29 to 30 January we watched an eclipse of the moon, which turned out to be a beautiful spectacle in the clear winter air at an altitude of 3,900 meters. Even at the height of the eclipse the lunar disk remained clearly visible and the steppe was so bright that I could recognize everything at 100 meters distance, although objects looked colorless and quivering. Along the upper part of the
• 312 Da ho ba River traces of rectangular earthworks are to be found. One of them, strangely enough, lies on the right side of the river, so that it is turned away from the impediment formed by the river. Somewhat farther upstream, on the left side of the valley, are remnants of irrigation systems, ditches and dikes, which, in the opinion of the Dankar men, are left over from Dandsin dsei (i.e. the rebel Lobzang Dandsin, see Vol. I, pp. 312 and 313). I suspect that the Chinese garrison stationed in the nearby earth works built these irrigation systems and that they stem from the time of the colonization efforts of the General of the Guards Ta ai (see Vol. II, pp. 20 and 95), in other words, from the year 1730. The strange thing is that agriculture could be carried on here at an altitude of 3,700 meters in a region where nowadays no one would think of planting fields and where even cattle raising is only temporarily possible.

000 We traveled higher and higher. We kept to the K'am road because we knew of no other route. We now covered the distance in one day for which we would have required two and one-half to three days three years before. I was pleased that my careful and circumspect preparation of the caravan prevented me from losing a single animal, and since I did not have to spend my time preparing maps, I had leisure for hunting. To be sure, there was not much to be bagged. My booty consisted of Dseren-antilopes, hares, foxes and hens. Kulane (kyang) were also plentiful, but very timid, even though we would not think of hunting them. /104/

Nowhere in the entire tala and several days' journeys to the south was there a spot of snow to be seen, except on the highest peaks over 4,600 meters, so that the animals had a bad time. Brown winter grass is meager food for animals like mine who, after a scant intake of food for fattening, must day after day climb paths that scarcely deserve the name, over the highest cliffs and passes. At night we chained the tortured creatures two by two in iron couplings, because of robbers, and the key to these couplings I kept in my pocket. During the day there were always only a few hours left for grazing. But one thing was important and helped me succeed: there were no swamps anywhere, nor those bottomless mires on the slopes and in the